L9 ANSWER 1 OF 1 WPIDS COPYRIGHT 2005 THE THOMSON CORP on STN
ACCESSION NUMBER: 2002-382420 [41] WPIDS
DOC. NO. CPI: C2002-107713
TITLE: Special polysiloxane compounds with polyalkylene oxide units and quaternary ammonium groups, useful e.g. as textile softening agents, in cosmetic formulations for hair and skin and in car-wash formulations.
DERWENT CLASS: A26 A82 A87 A96 A97 D21 D25 F06 G02
INVENTOR(S): KROPFGANS, M; LANGE, H; MOELLER, A; SOCKEL, K; STACHULLA, K; TEUBER, S; WAGNER, R; WITOSSEK, A; MOLLER, A
PATENT ASSIGNEE(S): (GENE) GE BAYER SILICONES GMBH & CO KG; (KROP-I) KROPFGANS M; (LANG-I) LANGE H; (MOLL-I) MOLLER A; (SOCK-I) SOCKEL K; (STAC-I) STACHULLA K; (TEUB-I) TEUBER S; (WAGN-I) WAGNER R; (WITO-I) WITOSSEK A
COUNTRY COUNT: 97
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
WO 2002010257	A1	20020207	(200241)*	GE	116	C08G077-46<--
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW						
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW						
AU 2001091687	A	20020213	(200242)			C08G077-46
EP 1309649	A1	20030514	(200333)	GE		C08G077-46
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR						
JP 2004505145	W	20040219	(200414)		192	C08G077-388
US 2004048996	A1	20040311	(200419)			C08G077-00
EP 1309649	B1	20040707	(200445)	GE		C08G077-46
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR						
DE 50102804	G	20040812	(200453)			C08G077-46
MX 2003000808	A1	20030901	(200465)			A61K007-48
ES 2227271	T3	20050401	(200524)			C08G077-46

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2002010257	A1	WO 2001-EP8699	20010727
AU 2001091687	A	AU 2001-91687	20010727
EP 1309649	A1	EP 2001-971792	20010727
		WO 2001-EP8699	20010727
JP 2004505145	W	WO 2001-EP8699	20010727
		JP 2002-515984	20010727
US 2004048996	A1	WO 2001-EP8699	20010727
		US 2003-333729	20030722
EP 1309649	B1	EP 2001-971792	20010727
		WO 2001-EP8699	20010727
DE 50102804	G	DE 2001-00102804	20010727
		EP 2001-971792	20010727
		WO 2001-EP8699	20010727
MX 2003000808	A1	WO 2001-EP8699	20010727
		MX 2003-808	20030127
ES 2227271	T3	EP 2001-971792	20010727

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 2001091687	A	Based on	WO 2002010257
EP 1309649	A1	Based on	WO 2002010257
JP 2004505145	W	Based on	WO 2002010257
EP 1309649	B1	Based on	WO 2002010257
DE 50102804	G	Based on	EP 1309649
		Based on	WO 2002010257
MX 2003000808	A1	Based on	WO 2002010257
ES 2227271	T3	Based on	EP 1309649

PRIORITY APPLN. INFO: DE 2000-10036543 20000727; DE
2000-10036530 20000727; DE
2000-10036541 20000727; DE
2000-10036542 20000727

INT. PATENT CLASSIF.:
MAIN: A61K007-48; C08G077-00; C08G077-388; C08G077-46
SECONDARY: A61K007-075; A61K007-11; C08G077-54; D06M013-513; D06M015-643; D06M015-647

BASIC ABSTRACT:

WO 200210257 A UPAB: 20020701

NOVELTY - Polysiloxane compounds containing:

(a) polyalkylene oxide units;

(b) di- or tri-valent organic residues with quaternary ammonium groups;

(c) polysiloxane structural units; and

(d) organic or inorganic acid residues to neutralize the charge on the quaternary ammonium groups.

DETAILED DESCRIPTION - Polysiloxane compounds containing:

(a) polyalkylene oxide unit(s) of formula (I), (II), (III), and/or (IV) and/or terminal polyalkylene oxide unit(s) of formula (V);

(b) di- or tri-valent organic residue(s) with at least one ammonium group;

(c) polysiloxane unit(s) of formula (VI); and

(d) organic or inorganic acid residue(s) to neutralize the charge on the ammonium group(s).

-A-E- (I)

-E-A- (II)

-A-E-A'- (III)

-A'-E-A- (IV)

-A-E-R2 (V)

-K-S-K- (VI)

A, A' = -CH2COO-, -(CH2)2COO-, -(CH2)3COO-, -OCOCH2-, -OCO(CH2)2- and/or -OCO(CH2)3-;

E = a polyalkylene oxide group of formula -(CH2CH2O)q-(CH2CH(CH3)O)r and/or -(CH2CH(CH3)O)r-(CH2CH2O)q- (with the terminal CH2 group or O atom linked to the terminal O atom or CO group in A or A' respectively so as to form ester groups);

q = 1-200;

r = 0-200;

R2 = H, or a linear, branched or cyclic 1-20C hydrocarbon residue (optionally acetylenic, olefinic or aromatic and optionally interrupted by O or CO or substituted with OH);

S = groups of formula -Si(R1)2O-(Si(R1)2O)n-Si(R1)2- (same or different if there are more than one);

R1 = 1-22C (fluoro)alkyl, or aryl;

n = 0-1000;

K = a di- or tri-valent 2-40C hydrocarbon group (linear, cyclic or

branched, optionally interrupted by -O-, -NH-, -NR1-, -N=, -CO-, -CS-, -NR3+= or -NR3R1+- (with R1 as above or possibly representing a bond to a divalent group R3) and/or substituted with OH); and

R3 = a mono- or di-valent 1-20C hydrocarbon residue (optionally interrupted by O, NH, CO or CS or substituted with OH), or the group -A-E-R2.

If K is a trivalent group, the third valency may form a bond to residue (b) above.

An INDEPENDENT CLAIM is also included for compositions containing these compounds and other conventional component(s).

USE - In cosmetic formulations for skin- and hair-care, in polishes for hard surfaces, in formulations for drying cars and other hard surfaces after washing (e.g. in a car-wash machine), for the (initial) finishing of textiles and textile fibres, as separate softeners after washing textiles with non-ionic or anionic/non-ionic detergents, as softeners in textile washing formulations based on such detergents and as agents for the prevention or removal of wrinkles in textiles (claimed).

ADVANTAGE - Effective, wash-resistant, hydrophilic softeners which give textiles a silicone-type soft feel and marked hydrophilic properties which are retained even after repeated washing with detergents at elevated temperature. These softeners are resistant to concentrated detergent solutions with high grease- and dirt-removing power and to the strongly alkaline complexing agents, oxidative bleaching agents and enzyme systems used in modern formulations. In hair treatment formulations, the compounds are resistant to washing out in the presence of surfactants.

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TECHNOLOGY FOCUS:

WO 200210257 A1UPTX: 20020701

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: Component (b) comprises (b1) residues of formula (VII), (b2) residues of formula (VIII), or (b3) residues of formula (IX)

-N1-F-N1- (VII)

-NR6R7+- (VIII)

-N5-F1-N5- (IX)

N1 = a quat. ammonium group of formula -NR4R5+-;

R4 = a mono- or di-valent 1-20C hydrocarbon group (optionally modified as for R3);

R5 = a monovalent 1-20C hydrocarbon group (optionally modified as for R3), or a single bond to divalent R4 or tetravalent F;

F = a di- or tetra-valent 2-30C hydrocarbon group (optionally interrupted by O, NH, N, CO, CS or a siloxane chain and optionally substituted with OH);

R6 = mono- or di-valent 1-30C hydrocarbon group (optionally modified with O, NH, CO, CS or OH as above), or a single bond to trivalent K;

R7 = 1-20C hydrocarbyl (optionally modified as for R6), -A-E-R2, or a single bond to divalent R6 or trivalent K

N5 = -NR23R24+-;

R23 = H or a mono- or di-valent 1-20C hydrocarbon group (optionally as in R6);

R24 = H, or a monovalent 1-20C hydrocarbon group (optionally as in R6), or a single bond to divalent R23; and

F1 = a divalent hydrocarbon group (optionally interrupted by O, NH, N, CO, CS or a group E).

Preferred Compounds: Polysiloxanes of formula (i), especially (ii), (iii), (iv) or (v).

-(B-N1-F-N1)m- (i)

R2-E-A-N2-K-S-N2-A-E-R2 (ii)

-(K-S-K-N3)m- (iii)

-(N4-K-S-K-N4-A-E-A')m- or -(N4-K-S-K-N4-A'-E-A)m- (iv)

-(N5-F1-N5-Y)m- (v)

m = 2-500;
B = -A-E-K-S-K-E-A- and optionally also -A-E-A'- or -A'-E-A-, such that the amount of -A-E-A'- or -A'-E-A- is up to 90 wt% of the polysiloxane component S;
N2 = -NR8R9+-;
R8, R9 = 1-20C hydrocarbylene and hydrocarbyl respectively, optionally modified as usual, or R9 may be a single bond to divalent R8 or trivalent K;
N3 = an organic residue containing quat. group(s) -NR10R11+-;
R10 = 1-30C hydrocarbyl or a single bond to K;
R11 = -A-E-R2;
N4 = an organic residue containing group(s) -NR12R13+-;
R12 = as for R8;
R13 = as for R12, or a single bond to K or R12; and
Y = -K-S-K- (Y1) and -A-E-A'- or -A'-E-A- (Y2), in a mole ratio of (Y1):(Y2) = (100:1)-(1:100).

FILE SEGMENT: CPI
FIELD AVAILABILITY: AB
MANUAL CODES: CPI: A05-H01A; A06-A00B; A06-A00D; A10-E01; A12-B01A; A12-S05S; A12-V04A; A12-V04C; D08-B08; F03-C05; F03-J03; G02-A05; G02-C

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